Inventor: David C. Hovda, et al Application No.: 09/963,736 Page 2 of 8 Attorney Docket E-5-2 Confirmation No.: 1485

AMENDMENT

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

LISTING OF CLAIMS

Claims 1. - 25. (Canceled).

Claim 26. (Currently Amended) An electrosurgical apparatus for treating tissue of a body structure, wherein treating comprises forming a bore hole having a side wall and an end wall, said body structure comprised of a body surface; the apparatus comprising:

a shaft comprising a proximal end portion and a rigid distal tip portion; an active electrode disposed on the distal tip portion of said shaft;

a return electrode disposed on the shaft and spaced proximally away from the active electrode, wherein an the axial spacing between the active and return electrodes on the shaft is sufficient to prevent both electrodes from simultaneously contacting the end wall of the bore hole body surface during said treating; and

an electrical conductor disposed through the shaft for connecting the active electrode across a high-frequency voltage supply, wherein the high-frequency voltage supply is sufficient to volumetrically remove at least a portion of said body structure thereby forming said bore hole.

Claim 27. (Previously presented) The apparatus of claim 26, further comprising a fluid delivery element having a discharge outlet in close proximity to the active electrode, wherein said outlet is adapted for defining an electrically conductive fluid path between the active electrode and the return electrode.

Claim 28. (Previously presented) The apparatus of claim 26, wherein the rigid distal tip portion of the shaft is sized for delivery into a paranasal sinus of the patient.

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Claim 29. (Currently Amended) The apparatus of claim 26, wherein the apparatus is adapted to ablate tissue selected from the group consisting of swellen-tissue, turbinates, polyps, neoplasms, cartilage and swollen mucus membranes lining an inner surface of the nasal cavity.

Claim 30. (Previously presented) The apparatus of claim 26, wherein the rigid distal end portion of the shaft has a diameter less than 2 mm.

Claim 31. (Previously presented) The apparatus of claim 26, wherein the rigid distal tip portion of the shaft has a diameter less than 1 mm.

Claim 32. (Previously presented) The apparatus of claim 26, wherein the return electrode has a tubular shape, and is disposed around said shaft.

Claim 33. (Previously presented) The apparatus of claim 26, further including a first insulating member positioned on the shaft between the active electrode and the return electrode.

Claim 34. (Canceled)

Claim 35. (Previously presented) The apparatus of claim 27, wherein the fluid delivery element comprises a fluid tube extending along an outer surface of the shaft, the tube having an inlet positioned proximal to the return electrode.

Claim 36. (Previously presented) The apparatus of claim 27, wherein the fluid delivery element comprises a fluid supply instrument.

Claim 37. (Previously presented) The apparatus of claim 27, wherein the active electrode comprises an electrode array disposed at the tip of the rigid distal tip portion of the shaft, the array including a plurality of first electrically isolated electrode terminals disposed over a contact surface.

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Claim 38. (Previously presented) The apparatus of claim 27, wherein the active electrode comprises a single active electrode disposed at the tip of the rigid distal tip portion of the shaft.

Claim 39. (Previously presented) The apparatus of claim 37, further comprising a plurality of current limiting elements each coupled to one of the electrode terminals for independently controlling current flow to each of the electrode terminals to inhibit power dissipation into the medium surrounding the body structure.

Claim 40. (Previously presented) The apparatus of claim 26, further comprising a fluid aspiration element for aspirating fluid from the body structure.

Claim 41. (Previously presented) The apparatus of claim 40, wherein the fluid aspiration element comprises a suction lumen extending through the shaft, the suction lumen having an outlet near the distal tip of the shaft adjacent the active electrode.

Claim 42. (Canceled).

Claim 43. (Previously Presented) The apparatus of claim 26, wherein the high-frequency voltage supply comprises an ablation mode and a coagulation mode, and wherein in the ablation mode a first voltage is applied to the electrodes to effect molecular dissociation or disintegration of the tissue; and in the coagulation mode, a lower voltage is applied to an electrode sufficient to achieve hemostasis of severed vessels within the body structure.

Claim 44. (Currently Amended) The apparatus of claim 26, wherein said distal end portion of the shaft is bent. comprises a material which can be bent relative to the longitudinal axis of the shaft to define a distal bend portion relative to the proximal end portion.

Claim 45. (Previously presented) The apparatus of claim 26, wherein the active electrode member is tapered towards the distal end to define a sharp point at the distal end.

Claim 46. (Previously presented) The apparatus of claim 26, wherein the distal end portion of the shaft comprises a bend angle of about 10° to 90°.

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Claim 47. (Canceled)

Claim 48. (Previously presented) The apparatus of claim 26, wherein the spacing between the active electrode and the return electrode on the shaft is greater than about 1 mm.

Claim 49. (Previously presented) The apparatus of claim 26, wherein the active electrode is coated with a conductive gel.

Claim 50. (Previously Presented) The apparatus of claim 26, wherein the high frequency voltage supply comprises a controller for regulating the voltage difference across the active and return electrode.

Claim 51. (Currently Amended) An electrosurgical apparatus for treating target tissue within or on a patient's body, said tissue including a tissue surface area, the apparatus comprising:

a shaft comprising a proximal end portion and pointed distal tip portion; an active electrode disposed on the distal tip portion a distal points

a return electrode disposed on the shaft and spaced proximally away from the active electrode,

wherein an the axial spacing between the active and return electrodes on the shaft is sufficient to prevent the active electrode and the return electrode from simultaneously contacting the tissue surface as the active electrode is initially inserted against the tissue surface during said treating; and

electrical conductors disposed through the shaft for connecting the electrodes across a high-frequency voltage supply, wherein the high-frequency voltage supply is sufficient to volumetrically remove at least a portion of said body structure.

Claim 52. (Previously Presented) The electrosurgical apparatus of claim 51, wherein the spacing between the active and return electrodes is greater than about 1.0 mm.

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Claim 53. (Previously Presented) The electrosurgical apparatus of claim 51, including a high frequency voltage controller for providing said high frequency voltage potential across the active and return electrodes.

Claim 54. (Previously Presented) The electrosurgical apparatus of claim 51, comprising a fluid delivery element having a discharge outlet in close proximity to the active electrode, wherein said outlet is adapted for forming an electrically conductive fluid path between the active electrode and the return electrode.

Claim 55. (Currently Amended) The electrosurgical apparatus of claim 51, comprising an insulating member positioned on the shaft between the active electrode and the return electrode; said insulator being sufficient to prevent arching between the electrode on application of the high-frequency voltage.

Claim 56. (Previously Presented) The electrosurgical apparatus of claim 51, wherein the active electrode is coated with a conductive gel.

Claim 57. (Previously Presented) The apparatus of claim 51, wherein the high frequency voltage supply comprises a controller for regulating the voltage difference across the active and return electrode.

Claim 58. (New) An electrosurgical apparatus for treating tissue of a body structure, the apparatus comprising:

a rigid shaft comprising a proximal end portion and a distal tip portion; an active electrode disposed on the distal tip portion of said shaft;

a return electrode disposed on the shaft and located proximal of the active electrode such that an axial space is present between the active electrode and the return electrode; and

an electrical conductor disposed through the shaft for connecting the active electrode across a high-frequency voltage supply, wherein the high-frequency voltage supply, in combination with said axial space, is sufficient to volumetrically remove at least a portion of said body structure leaving a bore hole.